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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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PTOL-90A (Rev. 04/07)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>11 September 2008</u>.
2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-11 and 14-21</u> is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) <u>1-11 and 14-21</u> is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All   b)☐ Some * c)☐ None of:
        1.☐ Certified copies of the priority documents have been received.
        2.☐ Certified copies of the priority documents have been received in Application No. _____.
        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.
4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.
5)☐ Notice of Informal Patent Application
6)☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This office action is in response to an amendment filed on 9/11/2008.

2. Claims 1, 2, 8, 10, 11 and 14 have been amended by the applicant.

3. Claims 3-7, 9 and 15-21 are original.

4. Claims 12 and 13 have been cancelled.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osaka

et al. (hereinafter "Osaka", US Patent 6,023,277) in view of Lipton et al. (hereinafter

"Lipton", US 2002/0011969).

Regarding claim 1, Osaka teaches a multimedia information generation apparatus

for generating a multimedia information data file including at least one two-dimensional

image or character information and at least one three-dimensional image (col. 14 lines

16-24: *"FIG. 8 is…showing the configuration of a computer system…In this embodiment,*

a two-dimensional image and a three-dimensional (stereoscopic) image are switched

between in…a display screen…" and col. 16 lines 11-15: *"…image file 50 according to*

this embodiment includes…three-dimensional image data 52 composed of combined

stripes, and two-dimensional image data 53…"), comprising:

a control information generation unit that generates control information for controlling display of said three-dimensional image (col. 1 lines 9-12: "...*a display control apparatus and method for controlling a stereoscopic display device which allows a user to observe a stereoscopic image...*"), wherein said the control information includes the number of viewpoints for the three-dimensional image (col. 16 lines 22-25: "...*the information in the header is supplemented by data peculiar to a three-dimensional image, such as whether of not a three-dimensional image is to be displayed, the number of viewpoint images of the three-dimensional image...*") and at least ii) a direction of thinning during generation of said three-dimensional image from said two-dimensional image (col. 9 lines 20-24: "*Left and right parallax images are displayed on the liquid crystal display device 1 in a vertically alternating array of horizontal stripes...*", in which the direction of the thinning, or directional stripe orientation, is provided, as disclosed in applicant's Specification in Fig. 4C), iii) parallax amount shift limit information (col. 24 lines 35-38: "...*moving the lenticular sheet 40 from the state in which it is in intimate contact with the mask pattern...to a position spaced a prescribed distance...*" and col. 3 lines 11-14: "...*a lenticular scheme is well known as means for displaying a stereoscopic image using the binocular parallax of the right and left eyes. In a lenticular system, a lenticular sheet comprising a number of semicylindrical lenses is provided in front of the display to spatially separate the image that enters the right and left eyes...*", wherein parallax images are moved by a defined parallax amount), iv) parallax image switching pitch information (col. 13 lines 17-20: "...*the two parallax images composed of the right- and left-eye images are displayed in time-division fashion screen by screen, it is required that the frame frequency be made higher than 120 Hz...*", in which the rate at which the

parallax images are cycled during stereoscopic display is provided, as disclosed in the

applicant's Specification on pg. 20 lines 26-27), iv) image arrangement of said two-

dimensional images corresponding to parallax images (col. 9 lines 43-45: "*...the*

horizontal stripe-shaped left and right images displayed in vertically alternating form on

the liquid crystal display..."), and v) reversal information on each of said parallax images

(col. 9 lines 61-65: "*...the pattern of apertures and light blocking portions of the mask*

pattern 209 is the reverse...the stripes of the right images among the horizontal stripe-

shaped left and right images displayed in vertically alternating form..."); and

a multimedia information generation unit generating said multimedia information

including said at least one two-dimensional image or character information and at least

one three-dimensional image and said control information (col. 14 lines 47-53: "*The*

display driver 6 comprises elements 7, 8, 9 and 10...An image painting unit 7 controls the

painting of data actually painted on the stereoscopic display, namely a two-dimensional

image handled heretofore and a three-dimensional image..." and lines 57-63: "*A screen*

controller 9 generates paint signals and distributes these signals to the image paint unit

7...A host computer 11 is capable of handling two-dimensional images and three-

dimensional images.", *where the display driver 6 comprises a paint unit 7 that generates*

the two and three dimensional images and also a screen controller that controls the

display of the three dimensional images, col. 17 lines 41-47: "*...the screen controller 9*

notifies the image painting unit 7 of the stereoscopic image data to be displayed, its

display position and size..."), wherein

said at least one two-dimensional image or character information and at least one

three-dimensional image are data to be synthesized (col. 13 lines 50-52: "*...a method of*

presenting a mixed display of a three-dimensional image and a two-dimensional

image…");

However, Osaka fails to teach camera arrangement information for image pick-

up, wherein said camera arrangement information for image pick-up indicates one of a

parallel camera arrangement. Lipton teaches camera arrangement information for image

pick-up (claim 6 lines 1-4: *"An autostereoscopic display system for generating*

stereoscopic images…comprising: N cameras each generating a master image…", ¶0047

lines 4-10: *"FIG. 6 shows an arrangement of video cameras…to produce a video*

Stream…which is displayed autostereoscopically…" and ¶0051 lines 7-16: *"…any*

number N views may be represented…software must render or create N master views…",

in which software provides a plurality of camera views arranged at certain positions for

image acquisition by an autostereoscopic apparatus), wherein said camera arrangement

information for image pick-up indicates one of a parallel camera arrangement (claim 6

lines 1-4: *"An autostereoscopic display system for generating stereoscopic*

images…comprising: N cameras each generating a master image…" and ¶0047 lines 4-

10: *"FIG. 6 shows an arrangement of video cameras…to produce a video*

Stream…which is displayed autostereoscopically…", *in which a parallax camera*

arrangement is provided, which provides a viewpoint side by side, or in parallel, for left

and right eyes), therefore it would have been obvious to one of ordinary skill in the art at

the time of invention to modify the stereoscopic imaging of Osaka with the camera

arrangement data provided by Lipton because this modification enables display of

stereoscopic images to be provided accurately to a user by generating the images for any

plurality of viewpoints through providing data describing the arrangement of the cameras configured to properly capture images suitable for stereoscopic display.

Regarding claim 2, Osaka teaches a multimedia information generation apparatus (Fig. 8), for generating a multimedia information data file comprised of a plurality of modules (col. 16 lines 11-15: "...*image file 50 according to this embodiment includes...three-dimensional image data 52 composed of combined stripes, and two-dimensional image data 53...*" *and is shown in* Fig. 12), comprising:

a module including at least one two-dimensional image or character information and at least one three-dimensional images (col. 14 lines 61-63: "*A host computer 11 is capable of handling two-dimensional images and three-dimensional images.*", *where the computer processes the image information, and transmits the information to the object analyzer*, Fig. 8), wherein

said modules include control information for controlling the display of the three-dimensional image (col. 17 lines 41-47: "...*the screen controller 9 controls the image painting unit 7 and the checkered mask-pattern painting unit 8 and causes a three-dimensional display to be presented at the position of the window of the stereoscopic display 12.*"),

said control information includes the number of viewpoints for the three-dimensional image (col. 16 lines 22-25: "...*the information in the header is supplemented by data peculiar to a three-dimensional image, such as whether of not a three-dimensional image is to be displayed, the number of viewpoint images of the three-dimensional image...*") and at least ii) a direction of thinning during generation of said three-dimensional image from said two-dimensional image (col. 9 lines 20-24: "*Left and*

right parallax images are displayed on the liquid crystal display device 1 in a vertically

alternating array of horizontal stripes…", in which the direction of the thinning, or

directional stripe orientation, is provided, as disclosed in applicant's Specification in

Fig. 4C), iii) parallax amount shift limit information (col. 24 lines 35-38: *"…moving the*

lenticular sheet 40 from the state in which it is in intimate contact with the mask

pattern…to a position spaced a prescribed distance…" and col. 3 lines 11-14: *"…a*

lenticular scheme is well known as means for displaying a stereoscopic image using the

binocular parallax of the right and left eyes. In a lenticular system, a lenticular sheet

comprising a number of semicylindrical lenses is provided in front of the display to

spatially separate the image that enters the right and left eyes…", wherein parallax

images are moved by a defined parallax amount), iv) parallax image switching pitch

information (col. 13 lines 17-20: *"…the two parallax images composed of the right- and*

left-eye images are displayed in time-division fashion screen by screen, it is required that

the frame frequency be made higher than 120 Hz…", in which the rate at which the

parallax images are cycled during stereoscopic display is provided, as disclosed in the

applicant's Specification on pg. 20 lines 26-27), iv) image arrangement of said two-

dimensional images corresponding to parallax images (col. 9 lines 43-45: *"…the*

horizontal stripe-shaped left and right images displayed in vertically alternating form on

the liquid crystal display…"), and v) reversal information on each of said parallax images

(col. 9 lines 61-65: *"…the pattern of apertures and light blocking portions of the mask*

pattern 209 is the reverse…the stripes of the right images among the horizontal stripe-

shaped left and right images displayed in vertically alternating form…"), and said at least

one two-dimensional image or character information and at least one three-dimensional

image are data to be synthesized (col. 13 lines 50-52: "*...a method of presenting a mixed display of a three-dimensional image and a two-dimensional image...*");

However, Osaka fails to teach camera arrangement information for image pick-up, wherein said camera arrangement information for image pick-up indicates one of a parallel camera arrangement. Lipton teaches camera arrangement information for image pick-up (claim 6 lines 1-4: "*An autostereoscopic display system for generating stereoscopic images...comprising: N cameras each generating a master image...*", ¶0047 lines 4-10: "*FIG. 6 shows an arrangement of video cameras...to produce a video Stream...which is displayed autostereoscopically...*" and ¶0051 lines 7-16: "*...any number N views may be represented...software must render or create N master views...*", *in which software provides a plurality of camera views arranged at certain positions for image acquisition by an autostereoscopic apparatus*), wherein said camera arrangement information for image pick-up indicates one of a parallel camera arrangement (claim 6 lines 1-4: "*An autostereoscopic display system for generating stereoscopic images...comprising: N cameras each generating a master image...*" and ¶0047 lines 4-10: "*FIG. 6 shows an arrangement of video cameras...to produce a video Stream...which is displayed autostereoscopically...*", *in which a parallax camera arrangement is provided, which provides a viewpoint side by side, or in parallel, for left and right eyes*), therefore it would have been obvious to one of ordinary skill in the art at the time of invention to modify the stereoscopic imaging of Osaka with the camera arrangement data provided by Lipton because this modification enables display of stereoscopic images to be provided accurately to a user from a plurality of viewpoints

through providing data describing the arrangement of the cameras configured to properly

acquire the images required for correct stereoscopic display.

Regarding claim 3, Osaka teaches control information is provided

correspondingly to each three-dimensional image (col. 17 lines 41-47: "...*the screen*

controller 9 controls the image painting unit 7 and the checkered mask-pattern painting

unit 8 and causes a three-dimensional display to be presented at the position of the

window of the stereoscopic display 12.").

Regarding claim 4, Osaka teaches that the control information is provided

correspondingly to a plurality of three-dimensional images (col. 17 lines 41-47: "...*the*

screen controller 9 notifies the image painting unit 7 of the stereoscopic image data to be

displayed...causing a stereoscopic image display to be presented in the above-mentioned

window.").

Regarding claim 5, Osaka teaches an identifier for identifying each of at least said

two-dimensional image and said three-dimensional image is set in advance (col. 16 lines

11-21: "*A three-dimensional image file 50 according to this embodiment includes a file*

header 51...image format...described in the file header. The application analyzes the

header, reads in the image data and causes the computer to paint the image.", where the

file header identifies that images prior to generation of the stereoscopic images, col. 17

lines 24-26: "...*it is determined, based upon the information in the file header 51,*

whether this window has three-dimensional image data."). Osaka also teaches that the

control information includes the identifier of the three-dimensional image (col. 38 lines

5-11: "...*it is determined, based upon the information in the file header 51, whether this*

window has three-dimensional image data.", where the information used to control the

display of the three-dimensional image is based on the identifier designating that the

image is three-dimensional).

Regarding claim 6, Osaka teaches an identifier for identifying each of at least said

two-dimensional image and said three-dimensional image is set in advance (col. 16 lines

11-21: "*A three-dimensional image file 50 according to this embodiment includes a file*

header 51…image format…described in the file header. The application analyzes the

header, reads in the image data and causes the computer to paint the image.", where the

file header identifies that images or prior to generation of the stereoscopic images, col.

17 lines 24-26: "*…it is determined, based upon the information in the file header 51,*

whether this window has three-dimensional image data."). Osaka also teaches that the

control information includes the identifier of the three-dimensional image (col. 38 lines

5-11: "*…it is determined, based upon the information in the file header 51, whether this*

window has three-dimensional image data.", where the information used to control the

display of the three-dimensional image is based on the identifier designating that the

image is three-dimensional).

Regarding claim 7, Osaka teaches that the control information includes a plurality

of identifiers (col. 16 lines 11-21: "*A three-dimensional image file 50 according to this*

embodiment includes a file header 51…image format…described in the file header. The

application analyzes the header, reads in the image data and causes the computer to

paint the image.").

Regarding claim 8, Osaka teaches a predetermined value that indicates that the

images in said multimedia information data file (col. 16 lines 11-15: "*…image file 50*

according to this embodiment includes…three-dimensional image data 52 composed of

combined stripes, and two-dimensional image data 53...") are three-dimensional images

(col. 38 lines 5-11: "...*it is determined, based upon the information in the file header 51,*

whether this window has three-dimensional image data.", where the file header contains

a pre-designated file extension that indicates whether the image is three-dimensional).

Regarding claim 9, Osaka teaches a predetermined value that indicates that the

images included in the modules are three-dimensional images (col. 38 lines 5-11: "...*it is*

determined, based upon the information in the file header 51, whether this window has

three-dimensional image data.", where the images thereby included in the memory

module, include a file header that contains a pre-designated file extension that indicates

whether the image is three-dimensional).

Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Osaka in view of Akamatsu et al. (hereinafter "Akamatsu", US Patent 6,313,866) in

further view of Lipton and in further view of Ellson et al. (hereinafter "Ellson", US

Patent 5,805,783).

Regarding claim 10, Osaka teaches a multimedia information reproduction

apparatus reproducing multimedia information from multimedia information data files

(col. 16 lines 11-15: "...*image file 50 according to this embodiment includes...three-*

dimensional image data 52 composed of combined stripes, and two-dimensional image

data 53..."), each including at least one two-dimensional image or character information

of two-dimensional page data and at least one three-dimensional images (col. 14 lines 16-

24: "...*the configuration of a computer system...In this embodiment, a two-dimensional*

image and a three-dimensional (stereoscopic) image are switched between in…a display screen…" and is shown in Fig. 12), comprising:

a generation unit that generates a three-dimensional image from a two-dimensional image or character information of two-dimensional page data (col. 21 lines 51-53: *"The stereoscopic-image-data processing unit 306 combines a pair of left and right image data…"* and lines 58-61: *"The display control unit 303 receives stereoscopic-image data formed by the stereoscopic-image-data processing unit 306…and displays the received data…"*), a three-dimensional image generated by a generation unit and a three-dimensional image included in each said multimedia information data file (col. 16 lines 11-15: *"…image file 50 according to this embodiment includes…three-dimensional image data 52 composed of combined stripes, and two-dimensional image data 53…"*). However, Osaka fails to teach a first synthesis unit that synthesizes a three-dimensional image, wherein generating the three-dimensional image from said character information of two-dimensional page data includes thinning a horizontal resolution of the character information of two-dimensional page data to 1/n when a number of viewpoints for the three-dimensional image is n, and then making a line forming a portion of three-dimensional image to have one of a horizontal dimension and vertical dimension that is bolder than that of a line representing a corresponding portion of the character information of two-dimensional page data;

Akamatsu teaches a first synthesis unit that synthesizes a three-dimensional image (col. 5 lines 4-11: *"…a first image signal is input to an input terminal 11, while a second image signal is input to a second input terminal 12… The output terminal of the parallax control circuit 103 is connected to the three-dimensional image synthesizer 103.",* where

the synthesis unit synthesizes two input three-dimensional images, therefore one of

ordinary skill in the art at the time of invention would have been capable of inputting the

three-dimensional images generated by Osaka and synthesize the images). However,

Osaka and Akamatsu fail to teach generating the three-dimensional image from said

character information of two-dimensional page data includes thinning a horizontal

resolution of the character information of two-dimensional page data to $1/n$ when a

number of viewpoints for the three-dimensional image is n, and then making a line

forming a portion of three-dimensional image to have one of a horizontal dimension and

vertical dimension that is bolder than that of a line representing a corresponding portion

of the character information of two-dimensional page data;

Lipton teaches generating the three-dimensional image from said character

information of two-dimensional page data includes thinning a horizontal resolution of the

character information of two-dimensional page data to $1/n$ when a number of viewpoints

for the three-dimensional image is n (¶0051 lines 3-6: "...*image 205 has a...horizontal*

resolution...as is the case for master images 201, 202 and 203." and ¶0058 lines 3-8:

"*Each master image has a reduced resolution...each master image has one Nth*

(1/N)...Therefore, each view has 1/Nth resolution...", *in which the horizontal resolution*

of stereoscopic images are reduced or thinned to $1/n$ for each two-dimensional image, or

page, for a number of viewpoints of the 3D stereoscopic data is n). However, Osaka,

Akamatsu and Lipton fail to teach making a line forming a portion of three-dimensional

image to have one of a horizontal dimension and vertical dimension that is bolder than

that of a line representing a corresponding portion of the character information of two-

dimensional page data;

Ellson teaches making a line forming a portion of three-dimensional image (col. 5

lines 45-58: "*A geometric model font is a specific type of three-dimensional font which in*

accordance with the present invention is a collection of font text characters in which each

character is described as a geometric model or object...Edge, line, wire frame, polygon

and geometric surface representations can also be used.") to have one of a horizontal

dimension and vertical dimension (Fig. 3: *42 & 40, respectively*) that is bolder than that

of a line representing a corresponding portion of the character information of two-

dimensional page data (col. 1 lines 44-55: "*...text is more often rendered in three*

dimensions...The next level of extension of the text into three dimensions adds a thickness

to all font characters...by the definition of a thickness, the data can converted into three

dimensions.", *where the thickness of the two-dimensional page text data is made thicker*

when it is converted to three-dimensional data, thereby maintaining the quality of the

bolder text and improving visibility of the text after conversion). Therefore it would have

been obvious to one of ordinary skill in the art at the time of invention to modify the

three-dimensional images of Osaka with the three-dimensional image synthesis of

Akamatsu, reduced image resolution capabilities of Lipton and character image thinning

techniques of Ellson because this modification would provide an improved stereoscopic

environment that enables display of both three-dimensional and two-dimensional image

simultaneously, wherein computationally efficient reduced resolution images are

presented with accurate visual continuity through enabling certain portions of the image

to be bolded during dimensional conversion to lessen any noticeable discontinuities that

are potentially displayed as a result of the conversion.

Regarding claim 11, Osaka teaches a second synthesis unit that synthesizes a

plurality of two-dimensional images or character information of two-dimensional page

data and generates three-dimensional image data from two-dimensional image data

obtained through synthesis, instead of said two dimensional images or character

information of two-dimensional page data (col. 41 lines 40-44: "...*painting a synthesized*

image, obtained by alternately arraying at least two parallax images in the form of

stripes, in the three-dimensional display zone...", *in which a plurality of 2D images are*

synthesized to produce 3D image data).

Claims 14-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Osaka in view of Iizuka in further view of Akamatsu, in further view of Lipton and in

further view of Ellson.

Regarding claim 14, Osaka teaches a multimedia information reproduction

apparatus reproducing multimedia information from multimedia information data files,

each including at least one two-dimensional image or character information and at least

one three-dimensional image (col. 16 lines 11-15: "...*image file 50 according to this*

embodiment includes...three-dimensional image data 52 composed of combined stripes,

and two-dimensional image data 53..."), comprising:

character information included in said each multimedia information data file (col.

16 lines 11-15: "...*image file 50 according to this embodiment includes...three-*

dimensional image data 52 composed of combined stripes, and two-dimensional image

data 53...");

a 2D/3D conversion unit converting page image (Fig. 44: element 1033a) into a three-dimensional image (Fig. 45: element 1033a); and

a three-dimensional image included in multimedia information data file (col. 16 lines 11-15: "...*image file 50 according to this embodiment includes...three-dimensional image data 52 composed of combined stripes, and two-dimensional image data 53...*");

a second synthesis unit that synthesizes a plurality of two-dimensional images (col. 41 lines 40-44: "...*painting a synthesized image, obtained by alternately arraying at least two parallax images in the form of stripes, in the three-dimensional display zone...*");

However, Osaka fails to teach a page data decoding unit decoding graphic and character information to obtain a page image, a first synthesis unit that synthesizes a three-dimensional image generated by a 2D/3D conversion unit and a three-dimensional image; and a first font image that displays character information three-dimensionally. Iizuka teaches a page data decoding unit decoding graphic and character information included in said multimedia information to obtain a page image (col. 21 lines 40-43: "*The image-file processing unit 304 reads various types of image files, analyzes the contents of the read file, decodes compressed data if necessary, and converts the data into image data having a predetermined standard format.*", where the image data representing the two-dimensional left and right images is decoded, therefore it would have been obvious to one of ordinary skill in the art at the time of invention to decode any image data including 2D image page data presented in a 2D window, as shown by Osaka, Figs. 34 and 45);

However, Osaka and Iizuka fail to teach a first synthesis unit that synthesizes a

three-dimensional image generated by a 2D/3D conversion unit and a three-dimensional

image included in multimedia information and a first font image that displays character

information three-dimensionally. Akamatsu teaches a first synthesis unit that synthesizes

a three-dimensional image generated by a 2D/3D conversion unit and a three-dimensional

image included in said multimedia information (col. 5 lines 4-11: "...*a first image signal*

is input to an input terminal 11, while a second image signal is input to a second input

terminal 12... The output terminal of the parallax control circuit 103 is connected to the

three-dimensional image synthesizer 103.", where the synthesis unit synthesizes two

three-dimensional images, therefore one of ordinary skill in the art would be capable of

inputting the three-dimensional images as taught Osaka, and synthesize the two three

dimensional images);

a first font image corresponding to character information (col. 3 lines 38-41:

"...*image signal specifically indicates a stereoscopically displayed character...", in*

which a first font image, which is a three-dimensional image, corresponds to character

information);

said first font image is used when the character is three-dimensionally displayed

(col. 6 lines 30-38: "...*a stereoscopic image corresponding to the second image signal is*

displayed in front. In the FIG. 8 ... a character...are appearing as stereoscopic

images...");

However, Osaka, Iizuka and Akamatsu fail to teach thinning a horizontal

resolution of the two-dimensional data to 1/n when a number of viewpoints for the three-

dimensional image is n, duplicating each thinned image to generate two images, and a

line forming a portion of said second font image has one of a horizontal dimensional and

vertical dimension that is thinner than that of a line representing a corresponding portion

of said first font image, and a second font image corresponding to character information

that is used when the character is two-dimensionally displayed;

Lipton teaches thinning a horizontal resolution of the two-dimensional data to 1/n

when a number of viewpoints for the three-dimensional image is n, and duplicating each

thinned image to generate two images (¶0014 lines 7-9: "...*lenticules 114, 115, and 116,*

allow the left and right eyes to see the perspective views required for a steresoscpic

image.", ¶0058 lines 3-8: "*Each master image has a reduced resolution...each master*

image has one Nth (1/N)...Therefore, each view has 1/Nth resolution..." and ¶0070 lines

1-3: "...*the first master image, numbered 1, represents...left-eye view and the last master*

image, numbered N, represents...right-eye view.", *in which the horizontal resolution of*

stereoscopic images are reduced or thinned to duplicate two images from one image, or

1/n, for a number of viewpoints in which the 3D stereoscopic data is n). However, Osaka,

Iizuka, Akamatsu and Lipton fail to teach and a line forming a portion of said second font

image has one of a horizontal dimensional and vertical dimension that is thinner than that

of a line representing a corresponding portion of said first font image and a second font

image corresponding to character information that is used when the character is two-

dimensionally displayed;

Ellson teaches making a line forming a portion of said second font image (col. 1

lines 53-54: "*The fonts are still stored as two-dimensional objects...*" and is shown in

Fig. 1a, *in which the second font image is a two-dimensional image*) to have one of a

horizontal dimension and vertical dimension (Fig. 3: 42 & 40, respectively) that is thinner

than that of a line representing a corresponding portion of said first font image, said first

font image is used when the character information is three-dimensionally displayed (col.

1 lines 44-55: "...*text is more often rendered in three dimensions...The next level of*

extension of the text into three dimensions adds a thickness to all font characters...by the

definition of a thickness, the data can converted into three dimensions.", where the

thickness of a two-dimensional second font image, Fig. 1a, is thinner than that of a

corresponding first font three-dimensional image, Fig. 1b) and a second font image

corresponding to character information that is used when the character is two-

dimensionally displayed (col. 6 lines 43-45: "*The user interacts with the selected*

graphics package to create font characters for each letter of the desired text output...").

Therefore it would have been obvious to one of ordinary skill in the art at the time of

invention to modify the three-dimensional images of Osaka, with the page data of Iizuka,

three-dimensional image synthesis of Akamatsu, reduced parallax image resolution of

Lipton and bolded character technique of Ellson because this modification would provide

realistic two-dimensional window images represented in three dimensions

stereoscopically where computationally efficient reduced resolution images are presented

with accurate visual continuity through enabling certain portions of the image to be

bolded during dimensional conversion to reduce any noticeable discontinuities that are

potentially displayed as a result of the conversion, thereby enabling accurate depth

perception of any two-dimensional window or page data in a three-dimensional

environment.

Regarding claim 15, Osaka fails to teach said page data decoding unit uses said

first or second font image to obtain the page image. Iizuka teaches decoding multimedia

information, or image files, to obtain image data (col. 21 lines 40-43: *"The image-file processing unit 304 reads various types of image files, analyzes the contents of the read file, decodes compressed data if necessary, and converts the data into image data having a predetermined standard format.", where the image data representing the two-dimensional left and right images is decoded*), therefore it would have been obvious for one of ordinary skill in the art at the time of invention to decode various types of image data known in the art, including 2D window data as illustrated by Osaka (Fig. 45: element 1033a), in order to utilize the data for further stereoscopic image processing. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the three-dimensional images of Osaka, with the page data of Iizuka, three-dimensional image synthesis of Akamatsu, reduced parallax image resolution of Lipton and bolded character technique of Ellson because this modification would provide realistic two-dimensional window images represented in three dimensions stereoscopically where computationally efficient reduced resolution images are presented with accurate visual continuity through enabling certain portions of the image to be bolded during dimensional conversion to reduce any noticeable discontinuities that are potentially displayed as a result of the conversion, thereby enabling accurate depth perception of any two-dimensional window or page data in a three-dimensional environment.

Regarding claim 16, Osaka illustrates a 2D/3D conversion that converts 2D image data (Fig. 44: element 1033a) into a three-dimensional image (Fig. 45: element 1033a), therefore the system disclosed by Osaka (Fig. 28) contains one or more computer processing components that perform the equivalent functionality of a synthesis unit that

synthesizes 2D font or character data and converts the data into three-dimensional, or

stereoscopic image data, for display.

Regarding claims 17 and 20, Osaka teaches storing a first font image, or three-

dimensional image and a second font image, or two-dimensionally displayed image (col.

16 lines 11-15: "…*image file 50…includes…three-dimensional image data…and two-*

dimensional image data…"). Osaka also teaches switching between the first and second

font image (col. 12 lines 6-8: "…*it is possible to switch between a two-dimensional*

display and a three-dimensional display…").

Regarding claim 18 and 21, Osaka teaches converting a second font image, or

two-dimensional image, in to a first font image, or a three-dimensional image (col. 13

lines 50-52: "…*a method of presenting a mixed display of a three-dimensional image and*

a two-dimensional image…").

Regarding claim 19, Osaka teaches that the first font image, or three-dimensional

image which was generated through synthesis of the two-dimensional images, comprise a

plurality of pieces of light/dark information and arranged so that apparent charter

thickness is thin (col. 27 lines 62-65: "…*the number of parallax images) reduces the*

aperture efficiency of the parallax barrier pattern, resulting in a darker observed

image.", Figs. 24A, 24B, 51A-51C and 52A, *where the character thickness is presented*

thin so the pieces may be synthesized for stereoscopic viewing).

Response to Arguments

Applicant's arguments filed 9/11/08 have been fully considered but they are not

persuasive.

The applicant argues on pg. 10 1ˢᵗ ¶ lines 1-9 of the remarks that the problems

discussed in the present application are not disclosed or suggested in Osaka. However, in

response to applicant's argument that the references fail to show certain features of

applicant's invention, it is noted that the features upon which applicant relies (i.e., pg. 10

1ˢᵗ ¶ lines 1-9: "…*including the control information in the multimedia information file*

that is formed by a recording apparatus (see, for example, Fig. 2 of the present

application), the image data reproduction apparatus (see, for example, Fig. 3 of the

present application) will be able to know in which format the three-dimensional image

data has been recorded and will be able to know the kind of processing that should be

adopted for displaying the three-dimensional data (see page 3, lines 20-24 of the present

application)…") are not recited in the rejected claim(s). Although the claims are

interpreted in light of the specification, limitations from the specification are not read into

the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

The applicant argues on pg. 11 1ˢᵗ ¶ line 1 - 2ⁿᵈ line 10 of the remarks that Osaka

et at. and Lipton et al. neither discloses nor suggests that the control information includes

the camera arrangement information for image pick-up, a direction of thinning during

generation of said three-dimensional image from the two-dimensional image, parallax

image switching pitch information, image arrangement of said two-dimensional images

corresponding to parallax images, and reversal information on each of the parallax

images. However, Osaka and Lipton clearly provide information which is utilized to

control and affect the display of image data, in which Lipton provides camera

arrangement information for image pick-up (claim 6 lines 1-4: "*An autostereoscopic*

display system for generating stereoscopic images…comprising: N cameras each

generating a master image…", ¶0047 lines 4-10: *"FIG. 6 shows an arrangement of video cameras…to produce a video Stream…which is displayed autostereoscopically…"* and ¶0051 lines 7-16: *"…any number N views may be represented…software must render or create N master views…"*, *in which software provides a plurality of camera views arranged at certain positions for image acquisition*), and Osaka provides a direction of thinning during generation of said three-dimensional image from said two-dimensional image (col. 9 lines 20-24: *"Left and right parallax images are displayed on the liquid crystal display device 1 in a vertically alternating array of horizontal stripes…"*, *in which the direction of the thinning, or directional stripe orientation, is provided, as disclosed in applicant's Specification in Fig. 4C*), parallax image switching pitch information (col. 13 lines 17-20: *"…the two parallax images composed of the right- and left-eye images are displayed in time-division fashion screen by screen, it is required that the frame frequency be made higher than 120 Hz…"*, *in which the rate at which the parallax images are cycled during stereoscopic display is provided, as disclosed in the applicant's Specification on pg. 20 lines 26-27*), image arrangement of said two-dimensional images corresponding to parallax images (col. 9 lines 43-45: *"…the horizontal stripe-shaped left and right images displayed in vertically alternating form on the liquid crystal display…"*), and reversal information on each of said parallax images (col. 9 lines 61-65: *"…the pattern of apertures and light blocking portions of the mask pattern 209 is the reverse…the stripes of the right images among the horizontal stripe-shaped left and right images displayed in vertically alternating form…"*).

The applicant argues on pg. 12 3rd ¶ lines 3-7 of the remarks that Lipton does not disclose camera arrangement information for image pick-up indicating one of

a parallel camera arrangement, a convergent camera arrangement and a divergent

arrangement. However, Lipton provides a camera arrangement indicating a parallel

camera arrangement (claim 6 lines 1-4: *"An autostereoscopic display system for*

generating stereoscopic images...comprising: N cameras each generating a master

image..." and ¶0047 lines 4-10: *"FIG. 6 shows an arrangement of video cameras...to*

produce a video Stream...which is displayed autostereoscopically...", in which a

stereoscopic camera arrangement is provided, thereby providing left/right views which

indicate parallel side-by-side viewpoints for stereo effect).

The applicant argues on pg. 12 3rd ¶ lines 3-7 of the remarks that Lipton's

thinning of two-dimensional image data is different from the thinning of two-dimensional

page data, as recited in claim 10. However, two-dimensional image data and two-

dimensional page data are equivalent, and contain the same graphical information in an x-

y space, therefore the thinning of two-dimensional image data and the thinning of two-

dimensional page data are functionally equivalent, and would have been obvious to one

skilled in the art at the time of invention to have equally thinned either two-dimensional

image in the same manner.

The applicant argues on pg. 12 4th ¶ lines 1-4 and on pg. 13 3rd lines 1-4 of the

remarks that Osaka et al., Akamatsu et al., Lipton et al. nor Ellson et al. discloses or

suggests generating the three-dimensional image from the character information of two-

dimensional page data includes thinning a horizontal resolution of the character

information l/n when a number of viewpoints for the three-dimensional image is n, and

duplicating each thinned image to generate two images. However, teaches that a three-

dimensional image, which therefore comprises one viewpoint(n) for the image, and is

then thinned to provide two-dimensional parallax images, which produces two

images(1/n) each containing a left and right view (¶0014 lines 7-9: "…*lenticules 114,*

115, and 116, allow the left and right eyes to see the perspective views required for a

steresoscpic image.", ¶0058 lines 3-8: "*Each master image has a reduced*

resolution…each master image has one Nth (1/N)…Therefore, each view has 1/Nth

resolution…" and ¶0070 lines 1-3: "*…the first master image, numbered 1,*

represents…left-eye view and the last master image, numbered N, represents…right-eye

view.").

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the

advisory action. In no event, however, will the statutory period for reply expire later than

SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SAID BROOME whose telephone number is (571)272-2931. The examiner can normally be reached on M-F 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ulka Chauhan can be reached on (571)272-7782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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